Convergence, Collaboration, Networking and Community Building

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Convergence, Collaboration, Networking and Community Building

SUMMARY: PNHRS demonstrates the power of collaboration in R&D, but it needs to take a further step in convergence by networking with other R&D subsystems and work further in building a competitive Philippines through the commercialization of technology.

CONTENTS OF PRESENTATION

- Context of Philippine Competitiveness
- Issues and Concerns: National Health Research Systems in Asia Pacific
- Main Global Trends for the Next 50 Years
- Implications to PNHRS; Next Steps

Convergence, Collaboration, Networking and Community Building

PNHRS (2002) led by DOST through PCHRD and DoH prepared the National Unified Health Research Agenda:

2. **Health financing**
3. **Governance**
4. **Health regulations**
5. **Health service delivery**
6. **Health technology and developments**
7. **Health research ethics**
8. **Health information systems**

Macroeconomic targets through 2010

	2004	2005	2006	2007	2008	2009	2010
Gross National Product	5.2-6.0	5.5-6.4	6.5-7.5	6.9-7.8	7.0-8.0	7.2-8.2	7.2-8.2
Gross Domestic Product	4.9-5.8	5.3-6.3	6.3-7.3	6.5-7.5	6.8-7.8	7.0-8.0	7.0-8.0
Fiscal Balance (& of DGP)	-4.2	-3.6	-2.9	-2.0	-1.1	-0.2	0.0
Inflation Rate	4.0-5.0	4.0-5.0	4.0-5.0	3.0-4.0	3.0-4.0	3.0-4.0	3.0-4.0
Unemployment Rate	12.1	11.0	11.6	11.1	10.4	9.7	8.9
Poverty Incidence (families) %	25.69-26.04	24.35-25.04	22.93-23.95	21.61-22.89	20.31-21.84	19.04-20.78	17.88-19.81

Source: Medium-Term Philippine Development Plan 2004-2010

An Inventory of Constraints Faced by the Philippines (1976-2005)

	76-80	81-85	86-90	91-95	96-00	01-05
GDP Growth	34%	-6%	26%	11%	21%	24%
External Shocks	X	X		X	X	
Economic Management						
▪Overall Macro Management						
▪Shifting Policies					X	X
▪High Indebtedness	X	X	X	X	X	X
▪Fiscal Management						
▪Low Revenue Collection					X	X
▪High Recurrent and Statutory Expenses					X	X
▪Loss Making GOCCs					X	X
▪Monetary Management						
▪Inconsistent Monetary Policies						X
▪Regulated Market for Foreign Exchange	X	X				
▪Financial Sector						
▪High Non Performing Assets and Loans					X	X
▪Banking Supervision & Regulation						X
▪Financial health of Pension & Other Funds					X	X

Source: ADB, IMF and World Bank Country Reports, Various Years

ADB

An Inventory of Constraints Faced by the Philippines (1976-2005)

	76-80	81-85	86-90	91-95	96-00	01-05
GDP Growth	34%	-6%	26%	11%	21%	24%
Economic Management (continued)						
▪Trade and Investment						
▪Trade Restrictions	X	X	X	X	X	
▪Stagnant Capital Formation		X	X	X	X	
▪Exposure to Short-term Capital Inflows			X	X	X	
Physical Infrastructure						
▪Weak Long-term Planning						X
▪Low Public Expenditure	X	X	X	X	X	
▪Inadequate Operation and Maintenance	X	X	X	X	X	
Human Capital						
▪High Population Growth	X	X	X	X	X	X
▪High Un-employment & Under Employment	X	X	X	X	X	X
▪Low Labor Productivity/High Wage Rates						X
▪Rural-Urban Inequalities	X	X	X	X	X	X
▪Regional Inequalities		X		X	X	X
▪Poor Service Delivery				X	X	X

Source: ADB, IMF and World Bank Country Reports, Various Years

ADB

An Inventory of Constraints Faced by the Philippines (1976-2005)

	76-80	81-85	86-90	91-95	96-00	01-05
GDP Growth	34%	-6%	26%	11%	21%	24%
Governance and Institutions						
■Governance						
■Corruption				X	X	X
■Regulatory Uncertainty						X
■Contract Enforcement						X
■Institutions						
■Weak Public Sector Institutions				X	X	X
■Weak Law and Order and Unreliable Judicial System					X	X
■Political Economy						
■Political Instability		X	X	X	X	X
■Feudalistic Influences	X		X		X	X
■Insurgency	X			X		X

Source: ADB, IMF and World Bank Country Reports, Various Years

The National Competitiveness Council

At the National Competitiveness Summit on 6 October 2006, Presidential Executive Order no. 571, created the National Competitiveness Council (NCC) as a Public-Private Partnership. President reiterated the key recommendations of all the workshop reports. Improvement in international competitiveness was to "create jobs (and) increase income as we move up the value chain." It was to "immediately address the critical problems of business efficiency, infrastructure, and governance." (Appendix V)

Composition:

Five cabinet members, three business sector representatives and one representative each from research institutions and civil society.

Public-Private Partnership: National Competitiveness Council

" Structured dialogues between public and private sector to improve the business climate... through a wide range of forms, from broad-based statutory consultation involving business associations and labor unions to small and informal groups of prominent businessmen meeting with top government ministers." (Herzberg and Wright 2005, p.2)

Common challenges and strategies identified in a study of 40 countries in diverse political settings to make such partnerships succeed:

a. To minimize vested interests, be open and transparent and create a broad base in committees.

b. To avoid dominance by big businesses over SMEs, strengthen business associations and reach out to all entrepreneurs equally.

c. To avoid degenerating into a talk shop, competitive partnerships must revisit its structure periodically, clear agendas with concrete proposals, manage expectations, make participants accountable to press and peers, and provide for exit mechanisms.

d. To avoid heavy reliance on one senior government official or adviser, generate support from bottom up and foster realistic expectations.

e. To avoid being too closely aligned with political factions , use outreach to de-politicize, and learn how to court parliamentarians and local politicians.

f. To avoid undermining existing institutions, bring them onboard and include technical staff from ministries or departments.

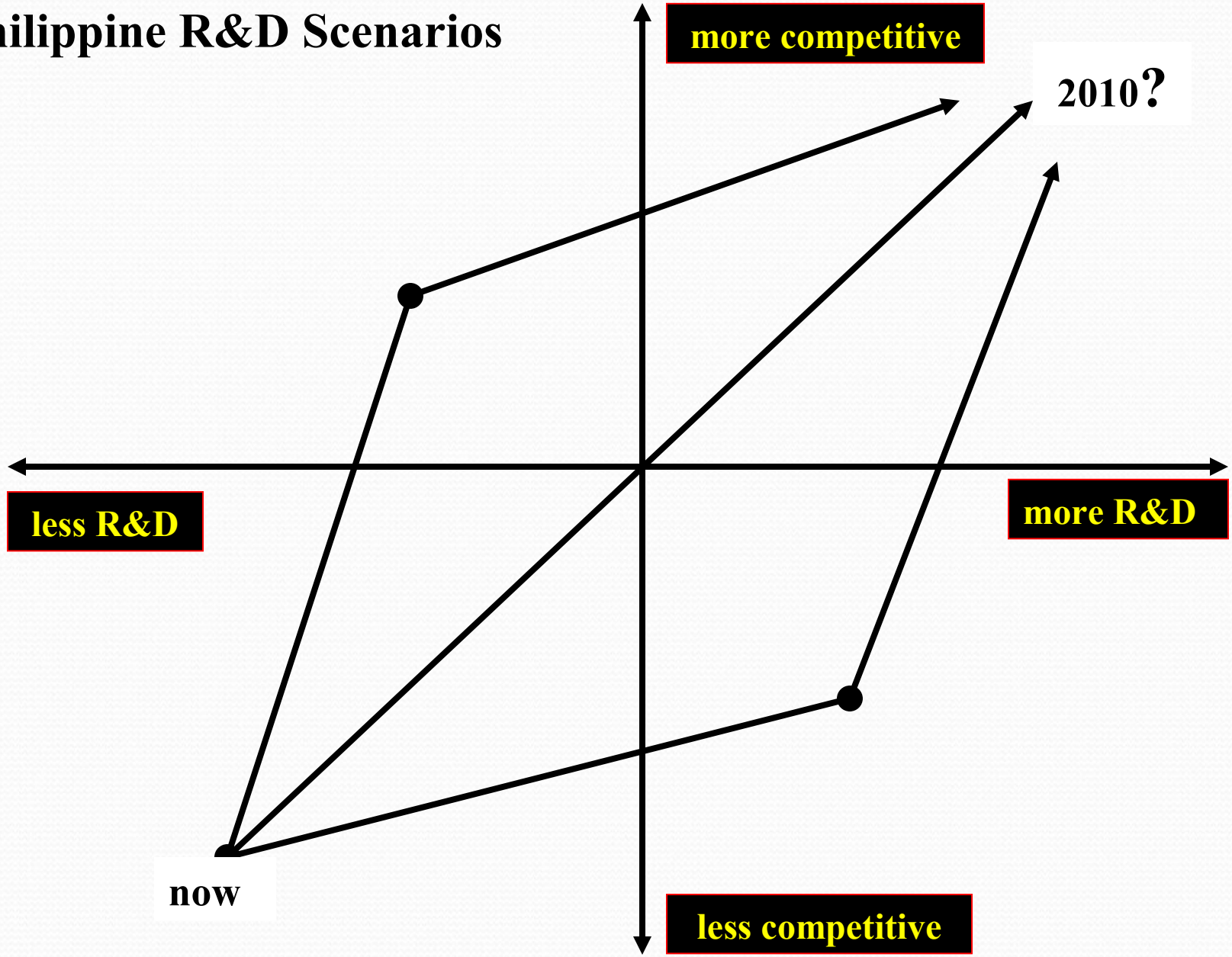
By end-2007, the NCC reported the following achievements:

- Easier entry/exit for foreign investors
- Reduction of certain costs for exporters
- Reduction of power costs in Philippine Economic Zone (manufacturing) sites
- Alignment of corporate projects with increased proficiency in English, Science & Math in lower schools
- Linkages with the Judicial and Legislative leaders on their roles towards a competitive Philippines
- Training towards model cities/towns by private sector
- Training centers for Small and Medium Enterprises towards credit worthiness
- Private sector initiatives in infrastructure projects
- Heightened dual-technology training
- Increased awareness of the importance of competitiveness among businesses

The economic performance of the country as of end- 2007 showed a marked improvement at the aggregate level:

- GDP grew by 7.3%, the highest in 31 years, pushing the economy to the world's 25th largest economy in purchasing power parity terms and the fastest growing economy in Southeast Asia that year.
- IMD 2008: Philippine Competitiveness Ranking moved from 45 to 40 (out of 55 countries).
- Since human resources remain to be the relative strength of the Philippine economy, many NCC members felt that the working group for this must fast track its multifarious concerns

Philippine R&D Scenarios



ISSUES & CONCERNS: NATIONAL HEALTH RESEARCH SYSTEM IN ASIA-PACIFIC

- Slow progress of the improvement of national health research systems in the Asia-Pacific region due to:
  - **Inadequacy of resources and investments** to support health research and research capacity building and strengthening
  - **Lack of engagement by stakeholders** in research & policy processes
  - **Research outputs often irrelevant**/not delivered on time to contribute to policy formulation
  - **Research not attuned to changing & emerging health needs**/ other social determinants of health

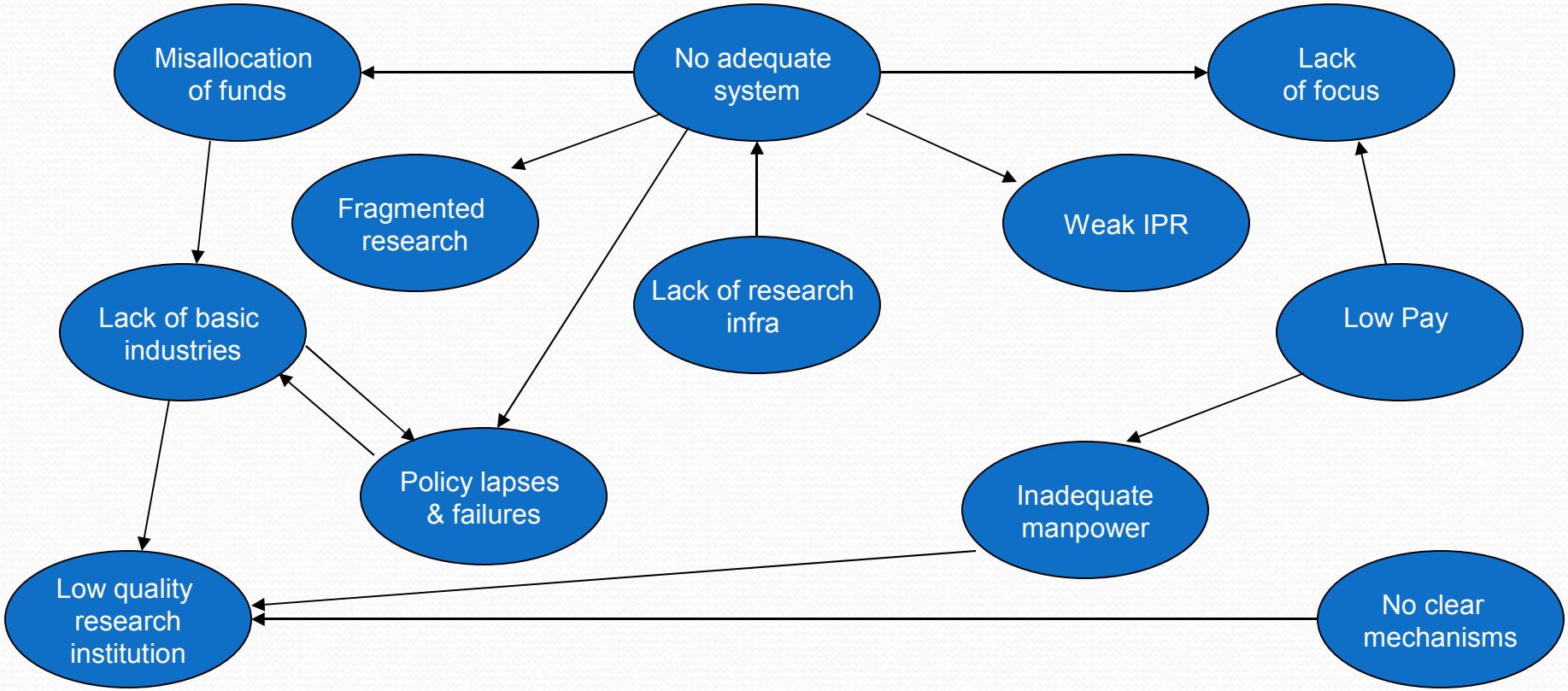
Source: Bangkok Statement, Asia-Pacific Meeting on National Health Research System, June 10-12, 2008

STRENGTHENING THE NATIONAL HEALTH RESEARCH SYSTEM IN ASIA-PACIFIC: RECOMMENDED ACTIONS

- Establish effective national mechanisms by engaging all relevant stakeholder including civil societies, in recognition of role of non-health sectors → PCCRD? PIRDS? COMSTE? STCC? NCC?
- Foster political and financial commitments in support of national health systems (to achieve 2% of the total national health expenditure; at least 5% of health program expenditure from development partners)
- Invest in capacity building, public health and health systems research to achieve health equity & ensure that research contributes to policy decisions
- Give special consideration to needs of least developed countries
- Investigate potential funding sources for health research
- Increase commitments on research production, management & utilization in partnership with stakeholders

Source: Bangkok Statement, Asia-Pacific Meeting on National Health Research System, June 10-12, 2008

PROBLEMS OF R & D IN THE PHILIPPINES



Source: DOST-sponsored FGD on "An Integrated Philippine R & D System", August 13, 2008, Pan Pacific Hotel, Malate, Manila

BASES FOR COLLABORATION

Experiences of the Philippines: Strengthening health research institutions

- PCHRD gave P14M institutional grant to UP Manila's Institute for Socio-biomedical Research (led to creation of the National Institutes of Health)
- PCHRD partners/co-funds activities of Regional Health Research and Development Committees

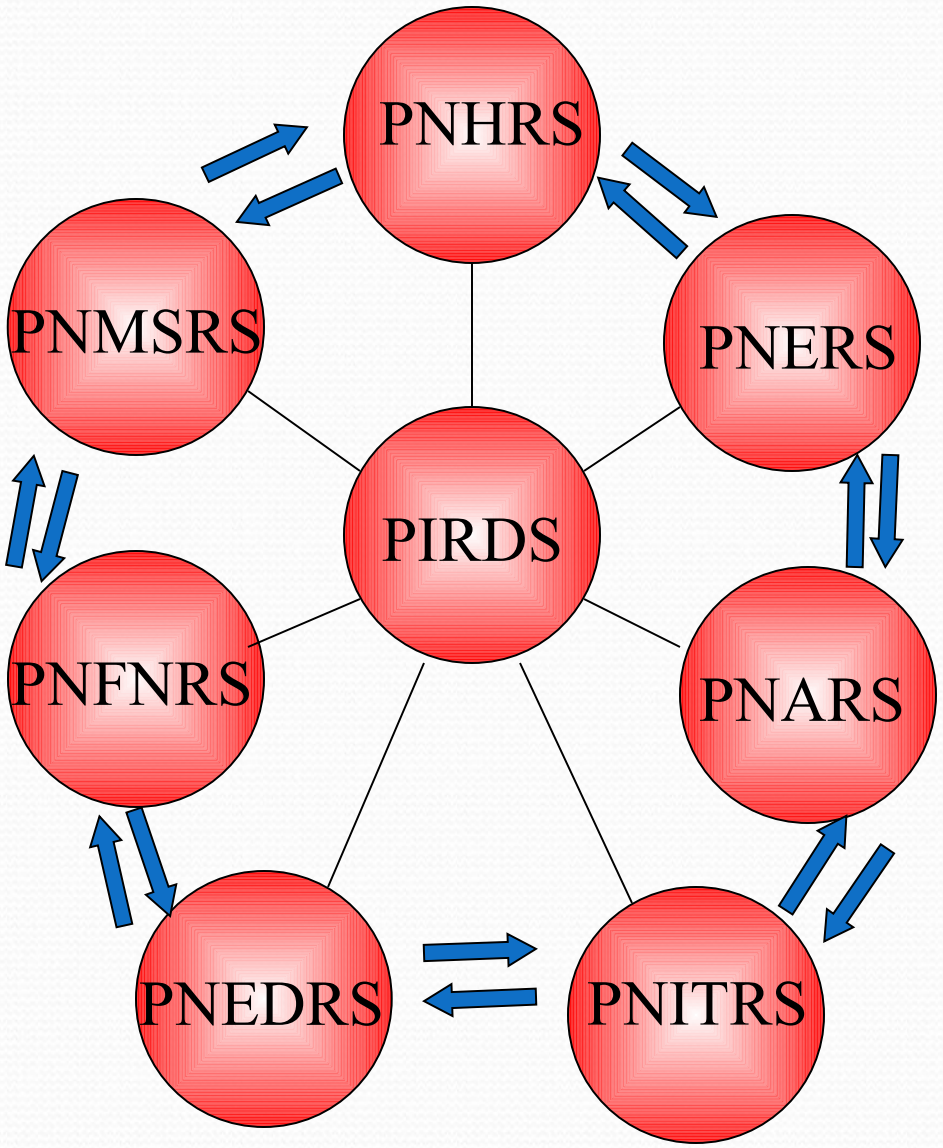
Source: H&L, Aug-Sept 2008

BASES FOR COLLABORATION

Experiences of the Philippines: Strengthening health research institutions

- PCHRD also has twinning programs which led to collaboration between:
- **UST-Faculty of Medicine & Surgery & Angeles University Foundation -College of Medicine;**
- **UE Ramon Magsaysay Memorial Medical Center & Xavier University-Dr. JP Rizal College of Medicine;**
- **FEU-Dr. Nicanor Reyes Medical Foundation & St. Louis Univ College of Medicine**

Proposed Integrated System



PNHRS- Phil. National Health Research System

PNERS- Phil. National Energy Research System

PNARS- Phil. National Agriculture Research System

PNITRS- Phil. National Information Technology Research System

PNFNRS- Phil. National Food and Nutrition Research System

PNMRS- Phil. National Marine Science Research System

PNEDRS- Phil. National Education Research System

PRESIDENTIAL COORDINATING COUNCIL FOR RESEARCH & DEVELOPMENT (PCCR & D)

Created only last February 2007 to review/recommend institutional arrangements for all sectors, oversee the allocation of public budget for R & D, recommend a system of agenda priority setting, institute measures for monitoring & evaluation; and recommend mechanisms & structure to encourage private & international funding.

COMPOSITION:

- Chaired by the President
- Vice-chaired by the DOST Secretary
- Members: Secretaries of DBM, DA, DOE, DENR, DFA, DOH, DND, DTI, Chairpersons of CHED & ICT, President of NAST, representatives from the private sector & the Orgn of S & E.

Health expenditure, services, and use

	Total % of GDP 2005	% of government expenditure 2005	Health Workers (per 1,000 people) Physicians 2000-06	Health Workers (per 1,000 people) Nurses and midwives 2000-06	Health Workers (per 1,000 people) Community Health Workers	Hospital Beds Per 1,000 people 2000-06
ASEAN						
Indonesia	2.1	5.1	0.1	0.8	0.0	-
Malaysia	4.2	7.0	0.7	1.8	-	1.8
Philippines	3.2	5.5	1.2	6.1	-	1.2
Singapore	3.5	5.6	1.5	4.5	-	2.8
Thailand	3.5	11.3	0.4	2.8	0.1	2.2
North-East Asia						
China	4.7	1.0	1.5	1.0	0.1	2.5
Japan	8.2	17.8	2.1	9.5	-	14.3
South Korea	5.9	10.9	1.6	1.9	-	7.1
Other						
Australia	8.8	17.0	2.5	9.7	0.2	4.0
New Zealand	8.9	18.0	2.2	8.9	1.4	6.0
USA	15.9	0.7	2.3	9.4	-	3.3
India	5.0	3.5	0.6	1.3	0.1	0.9

Source: The World Bank, World Development Indicators 2008

Disease prevention coverage and quality

	Child immunization rate- measles % of children ages 12-23 months (2006)	Children with acute respiratory infection taken to health provider % of children under age of ARI (2000-06)	Tuberculosis treatment success rate % of new registered cases (2005)	DOTS detection rate % of new estimated cases (2006)
ASEAN				
Indonesia	72	61	91	73
Malaysia	94	-	70	80
Philippines	92	55	89	77
Singapore	93	-	83	107
Thailand	96	84	75	73
North-East Asia				
China	93	-	94	79
Japan	99	-	60	79
South Korea	96	93	89	97
Other				
Australia	94	-	80	40
New Zealand	82	-	60	61
USA	93	-	64	88
India	59	69	86	64

Source: The World Bank, World Development Indicators 2008

Reproductive health

	Contraceptive prevalence rate % of married women ages 15-49 (2000-06)	Pregnant women receiving prenatal care % (2000-06)	Birth attended by skilled health staff % of total (2000-06)
ASEAN			
Indonesia	57	92	72
Malaysia	-	79	98
Philippines	49	88	60
Singapore	-	-	100
Thailand	77	98	97
North-East Asia			
China	87	90	98
Japan	56	-	100
South Korea	-	-	97
Other			
Australia	-	-	100
New Zealand	-	-	97
USA	-	-	99
India	56	74	47

Source: The World Bank, World Development Indicators 2008

Nutrition

	Prevalence of undernourishment (% of population, 2002-04)	Prevalence of child malnutrition (% of children underage 5-underweight, 2000-06)
ASEAN		
Indonesia	6	24.4
Malaysia	3	-
Philippines	18	20.7
Singapore	-	3.3
Thailand	22	-
North-East Asia		
China	12	6.8
Japan	<2.5	-
South Korea	<2.5	-
Other		
Australia	<2.5	-
New Zealand	<2.5	-
USA	<2.5	1.1
India	20	43.5

Source: The World Bank, World Development Indicators 2008

Health risk factors and public health challenges

	Prevalence of smoking (% of adults- MALE) 2000-05	Prevalence of smoking (% of adults- FEMALE) 2000-05	Prevalence of HIV (Total % of population ages 15-49) for 2005	Condom use (% of population ages 15-24, MALE) 2000-06	Condom use (% of population ages 15-24, FEMALE) 2000-06
ASEAN					
Indonesia	58	3	0.1	-	1
Malaysia	43	2	0.5	-	-
Philippines	41	8	<0.1	13	3
Singapore	24	4	0.3	-	-
Thailand	49	3	1.4	-	-
North-East Asia					
China	67	4	0.1	-	-
Japan	47	15	<0.1	-	-
South Korea	-	-	<0.1	-	-
Other					
Australia	19	16	0.1	-	-
New Zealand	24	22	0.1	-	-
USA	24	19	0.6	-	-
India	47	17	0.9	-	-

Source: The World Bank, World Development Indicators 2008

Mortality

	Life expectancy at birth (2006) – (years)	Life mortality rate (2006) – (per 1000 live of births)	Child mortality rate (1997-2006)Male (per 1000)	Child mortality rate (1997-2006)Female –(per	Adult mortality rate (2006-2006) Male –(per 1000)	Adult mortality rate (2006-2006) Female –(per 1000)
ASEAN						
Indonesia	68	26	13	11	172	123
Malaysia	74	10	-	-	156	89
Philippines	71	24	14	9	161	107
Singapore	80	2	-	-	83	47
Thailand	70	7	-	-	276	162
North-East Asia						
China	72	20	-	-	153	92
Japan	82	3	-	-	93	45
South Korea	78	5	-	-	114	47
Other						
Australia	81	5	-	-	85	49
New Zealand	80	5	-	-	81	53
USA	78	6	-	-	140	82
India	64	57	25	37	260	168

Source: The World Bank, World Development Indicators 2008

Ranking of Selected Countries in World Competitiveness

Health, Safety, and Environmental Concerns[1]

Indonesia	43
Malaysia	11
Philippines	**36**
Singapore	17
Thailand	21
China	44
HongKong	30

Taiwan	24
Japan	12
South Korea	22
Australia	7
New Zealand	2
USA	19
India	39

[1] Survey, “adequately addressed by management”

SOURCE: 2008 IMD World Competitiveness Yearbook

Ranking of Selected Countries in World Competitiveness

Total Health Expenditure[1]

Indonesia	55
Malaysia	52
Philippines	**54**
Singapore	51
Thailand	53
China	48
HongKong	44

Taiwan	41
Japan	29
South Korea	42
Australia	15
New Zealand	19
USA	1
India	47

[1] Percentage of GDP

SOURCE: 2008 IMD World Competitiveness Yearbook

Ranking of Selected Countries in World Competitiveness

Total Health Expenditure per Capita[1]

Indonesia	55
Malaysia	48
Philippines	**53**
Singapore	26
Thailand	51
China	52
HongKong	25

Taiwan	28
Japan	17
South Korea	27
Australia	14
New Zealand	19
USA	2
India	54

[1] US$ per Capita

SOURCE: 2008 IMD World Competitiveness Yearbook

Ranking of Selected Countries in World Competitiveness

Public Expenditure on Health[1]

Indonesia	54
Malaysia	39
Philippines	**52**
Singapore	53
Thailand	33
China	51
HongKong	38

Taiwan	34
Japan	10
South Korea	40
Australia	29
New Zealand	11
USA	47
India	55

[1] Percentage of Total Health Expenditure

SOURCE: 2008 IMD World Competitiveness Yearbook

Ranking of Selected Countries in World Competitiveness

Health Infrastructure[1]

Indonesia	42
Malaysia	20
Philippines	**38**
Singapore	4
Thailand	24
China	32
HongKong	14

Taiwan	12
Japan	21
South Korea	25
Australia	22
New Zealand	27
USA	29
India	40

[1] Survey, “meets the needs of society”

SOURCE: 2008 IMD World Competitiveness Yearbook

Ranking of Selected Countries in World Competitiveness

Life Expectancy at Birth[1]

Indonesia	50
Malaysia	43
Philippines	**50**
Singapore	10
Thailand	49
China	39
HongKong	2

Taiwan	29
Japan	1
South Korea	23
Australia	3
New Zealand	12
USA	26
India	54

[1] Average Estimate

SOURCE: 2008 IMD World Competitiveness Yearbook

Ranking of Selected Countries in World Competitiveness

Healthy Life Expectancy[1]

Indonesia	49
Malaysia	33
Philippines	**45**
Singapore	9
Thailand	44
China	29
HongKong	-

Taiwan	17
Japan	1
South Korea	15
Australia	4
New Zealand	9
USA	13
India	53

[1] Average Estimate

SOURCE: 2008 IMD World Competitiveness Yearbook

Ranking of Selected Countries in World Competitiveness

Infant Mortality[1]

Indonesia	52
Malaysia	36
Philippines	**49**
Singapore	1
Thailand	42
China	46
HongKong	-

Taiwan	27
Japan	2
South Korea	22
Australia	22
New Zealand	22
USA	30
India	54

[1] Under 5 Mortality Rate per 1000 Live Births

SOURCE: 2008 IMD World Competitiveness Yearbook

Ranking of Selected Countries in World Competitiveness

Health Problems (sicknesses, AIDS, alcohol, drug abuse, etc.)[1]

Indonesia	44
Malaysia	35
Philippines	**49**
Singapore	1
Thailand	30
China	46
HongKong	4

Taiwan	13
Japan	19
South Korea	34
Australia	15
New Zealand	19
USA	40
India	39

[1] Survey, “significant impact on companies”

SOURCE: 2008 IMD World Competitiveness Yearbook

CONCEPT OF HEALTH RESEARCH SYSTEM

Values and principles for a health system

- Equity/fairness (reflected in goals).
- Health seen as “developmental.”
- Community centeredness and human dignity.
- Prioritized and needs-based.
- Includes both public health and biomedical elements.
- Accountability
- Sound ethics

Source: WHO, 2001

WHERE IS PNHRS IN TERMS OF COLLABORATION?

- '**Collaboration**' : a concept with many meanings—from the 'great collaboration' of Thomas Jefferson and James Madison in shaping early American institutions (Ellis, 2000) to collaboration of the Internet two hundred years later. Katz and Martin (1996) explained collaboration with reference to the research process.
- Implies a **team of individual researchers working toward achieving a common goal**; with each member focused on a defined area of research but also understanding how their work will contribute to the completion of the whole project. (Source: www.niu.edu/rcrportal/collabresearch/types/.html)

TYPES OF COLLABORATION

- within academic institutions (university researchers)
  - among faculty, staff, and administrators
  - within/between departments
  - faculty and students
  - among students – PCHRD Gruppo Medica Award
- between academic institutions –UST-AU, UST-JPR. FEU-SLU
- between academic institutions and government agencies/departments
- between academic institutions and private industry
- geographic: domestic and international

(Source: www.niu.edu/rcrportal/collabresearch/types/.html)

FORMATS OF COLLABORATION

- face-to-face
- phone
- mail (regular, postal delivery overnight, electronic)
- online
- videoconferencing

- Fitzpatrick (1999), a nursing researcher, warns "There is value in face-to-face interactions with colleagues in nursing that will never be replaced by technology, no matter how sophisticated the tools“

(Source: www.niu.edu/rcrportal/collabresearch/types/.html)

BASES FOR COLLABORATION

Why has collaboration increased?

- Increasing specialization across disciplines and fields
- complexity of research problems
- rising costs of technological apparatus
- development of new information and communication technologies
- lower travel costs

- Source: Ricardo B. Duque et al, Louisiana State University (**Collaboration Paradox:Scientific Productivity, the Internet, and Problems of Research in Developing Areas**)

High and low output-oriented motivations of collaboration (Lee and Bozeman, 2004)

- to gain access to special equipment, special skills, unique materials
- for visibility, recognition, time efficiency, labor efficiency, gaining experience, training researchers, sponsoring a protégé, increase productivity, multiply proficiencies
- to avoid competition, surmount intellectual isolation, confirmation of a research problem, intellectual stimulation of cross-pollination, spatial propinquity, accident or serendipity.

- **Social motivations (less output-oriented)** include enjoying stimulating experiences and working with old colleagues. In addition, ‘the shadow of the future’ or the anticipation of future interaction is an underlying social motivation for positive interpersonal behavior and feelings in shared work. Source: (Bouas and Arrow, 1995)
- Competitiveness Roadmap 2008-2050 (International Institute for Management Development): life sciences and environment attract massive investments; new environmental strategies for companies; more managers are needed everywhere; service and integration are key competitiveness factors; (Cont’d)

OTHER MOTIVATIONS FOR COLLABORATION

- Competitiveness Roadmap 2008-2050: (Cont'd) emergence of a new middle class; competitiveness based on cheap manpower to cheap brainpower; urbanization means congestion; "work hard, get rich" vs.life work balance; remoteness becomes irrelevant; life expectancy increases but so do expenses; climate change affect economic resources; pandemic risks occur more frequently.

RESEARCH COLLABORATION TRENDS

- Traditionally, most international research collaborations have been taking place in the advanced (G7, EU and OECD) countries
- In recent years, Asian countries increased their share of worldwide collaboration, e.g. China, South Korea, Taiwan & Singapore have become more international ,with China fast emerging as a regional focal point.
- Central/East European Countries (CEEC) co-operate more with western countries, leading to an increase in research/publication partnerships with Western scientists

Source: Research Group of the Institute for Scientific Information & Science Citation Index (SCI)

RESEARCH COLLABORATION TRENDS

- **Rapid growth in international collaboration**
  e.g. Oct 2005 -- 10 research universities worldwide launched Global Enterprise for Micro-Mechanics and Molecular Medicine (GEM4) at MIT to use nanotechnology tools for global health and medical research.
- GEM4 represents an ambitious effort to apply global sourcing principles to research at the intersection of engineering and life sciences.
- Philippine participation in international multicenter trials

  (44 countries, 1000 sites) :Philippines number one in Asia, ahead of Singapore and HongKong in quality

RESEARCH COLLABORATION TRENDS

- **Rapid growth in international collaboration** (Dr. Dante Morales, Health & Lifestyle, Aug-Sept 2008, p.25) Benefits to the Philippines: prestige, being known, more experience, patients getting free medicines, laboratory exams, other ancillary services and doctor's consultations.
- Links to competitiveness: nutrition-education- economic performance : 6th National Nutrition Survey (2003) DoH contributed money, 14 different Philippine medical organizations provided counterpart funds of P5 million, DOST-FNRI contributed manpower ; 7th NNS (2008) 11 specialty medical organization contributing, DOH and DOST- FNRI further collaborating → Philippine Business for Education program on nutrition for school

RESEARCH COLLABORATION TRENDS

- **Growing complexity of science and the increasing specialization of scientists** **e.g.** $3.1M local ***leading -edge*** health research collaboration in April 2004 between Canadian Institutes of Health Research (CIHR) and the National Research Council (NRC) in the fields of nanomaterials and nanorobotics, applied to health and regenerative medicine, in biophotonics applied to health, and in diagnostic imaging. Note: Funding provided for in Federal Budget and built into the fiscal framework
- Note: Can PNHRS collaborate on nanotechnology with other R&D subsystems?

RESEARCH COLLABORATION TRENDS

- Most collaborative projects in the developing world are funded by multilateral and bilateral donors
- Costs associated with collaboration are much higher in developing countries than in the developed world. Nearly all activities related to coordination require interaction, communication and information exchange that involve significant expenditures of time and energy.

Source: Ricardo B. Duque et al, Louisiana State University (**Collaboration Paradox:Scientific Productivity, the Internet, and Problems of Research in Developing Areas, 2005)**

APPROACHES TO INTERNATIONAL RESEARCH COLLABORATION

Collaboration through international co-authorship

- multi-institutionally coauthored papers increased from 1989-92 by 46% (from an annual average of 177,100 to 258,500)
- internationally coauthored articles increased by almost 115% (from 35,700 to 76,200) (Source: M S Swaminathan Research Foundation, India)
- co-authorship has been preferred as an indicator of collaboration, though it represents only a limited kind of collaborative relationship

(Source: Ricardo B. Duque et al, Louisiana State University)

APPROACHES TO INTERNATIONAL RESEARCH COLLABORATION

- technological advances in telecommunications & the internet lead to virtual contacts between /among geographically separated people , resulting to collaborative work between scientists and scholars who have never met except on the net

EXPERIENCES : DIVISION of PUBLIC HEALTH/ CENTER for the ADVANCEMENT OF COLLABORATIVE STRATEGIES in HEALTH, NEW YORK ACADEMY OF MEDICINE

- Operationally uses an integrated and collaborative approach and carries out its work through **joint-learning workgroups** that involve people and organizations around the country who are actively involved in community-level problem solving, **consultants with expertise in a variety of relevant areas**, as well as staff members, for the **development of new kinds of investigative tools and practices** that enable people from diverse backgrounds to participate meaningfully in collaborative research and analysis.

EXPERIENCES : DIVISION of PUBLIC HEALTH/ CENTER for the ADVANCEMENT OF COLLABORATIVE STRATEGIES in HEALTH, NEW YORK ACADEMY OF MEDICINE

- The Center's work in emergency preparedness—Redefining Readiness—documented that **policymakers and planners need to learn from the public in order to protect the public**, leading to the development of new engagement practices. The Center's work in Pathways to Collaboration is making it possible for **government officials, practitioners and funders to give people who have been excluded from community decision making an influential voice** about issues that affect their lives.

Source: New York Academy of Medicine website

RESEARCH COLLABORATION MODELS

Research models (how collaboration strengthens the ability to identify, understand, solve complex problems.

- **The Model of Partnership Synergy** describes the mechanism that gives collaboration its unique advantage.
- **The Model of Community Health Governance** describes how broadly participatory processes lead to more effective community problem solving and to improvements in community health.
- **The Model of Influence** describes how experiential and expert knowledge is contributed and used in collaborative community-level problem solving.

Source: New York Academy of Medicine website

RESEARCH COLLABORATION FRAMEWORK

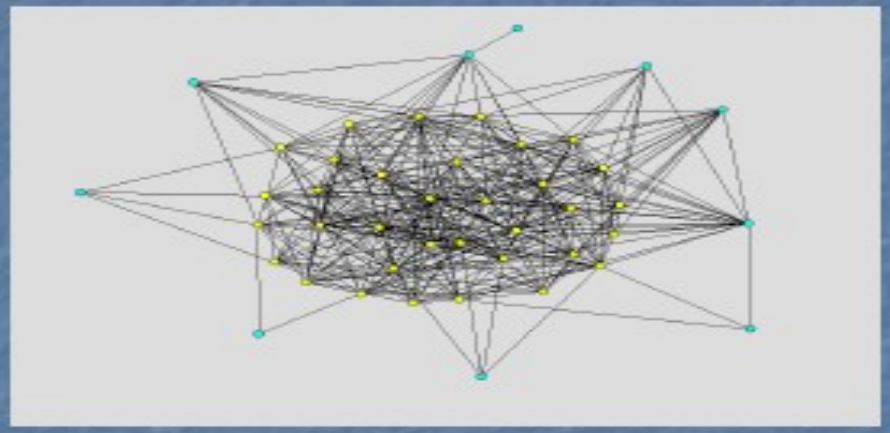
(*YongsukJang, Ph.D.Senior Research ScientistCenter for International Science and Technology Policy, The George Washington University , October 25, 2007)*

Research Networks

Interactions (including Collaboration) for R&D → **Research Networks**

- View from Various Characteristics of Interactions

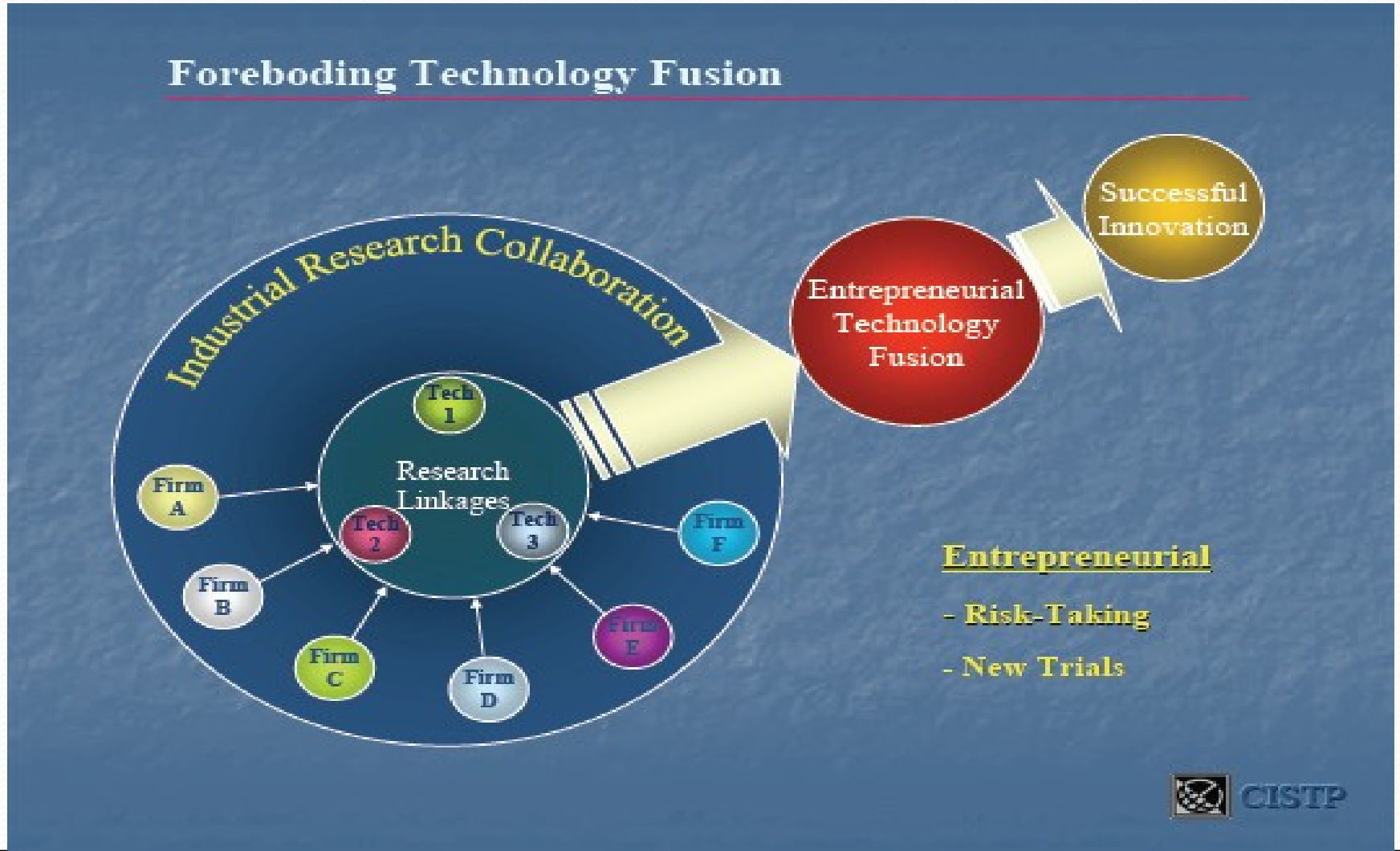
- Individual Researchers
- Institutes
- Countries
- Disciplines
- Technological Areas
- Knowledge Components
- Industrial Interactions
- or, What?



Which Networks are Good or Bad?

CISTP

INDUSTRIAL RESEARCH COLLABORATION FRAMEWORK



SURVIVOR PRINCIPLE AS APPLIED TO RESEARCH NETWORKS

Methodology: Theoretical Ground

David Teece, Richard Rumelt, Giovanni Dosi, Sidney Winter (1994), "Understanding corporate coherence: Theory and evidence"

Survivor Principle

"Economic competition eliminates relatively inefficient organizational forms over time."

- **Applied to the research network analysis, the survivor principle assumes that related characteristics (e.g., technologies) will be more frequently combined through research networks.**
- **In other words, for instance, if a certain pair of technologies is frequently observed throughout each database, it can be assumed that these two technologies are highly related.**
- **Conversely, technologies rarely or never combined are unrelated."**

STAGES OF RESEARCH COLLABORATION

Other Implications of Research Networks I

- **Interdisciplinary Research**
  - Analytical Unit: Major Disciplines of Researches
  - Data: SCI Publications or Funded Basic Research
- **Technological Convergence**
  - Analytical Unit: Technological Areas
  - Data: Patents or Engineering Compendex
- **Triple Helix**
  - Analysis Unit: Organizational Types of Participants
  - Data: Various Research-related Interactions among University, Industrial Firms, and Government

STAGES OF RESEARCH COLLABORATION

Other Implications of Research Networks II

- **Research Diversification**
  - Analysis Unit: Technical Areas of Researches in which Industrial Firms involve
  - Data: Research Joint Ventures
- **Industrial Collusion**
  - Analytical Unit: Business Lines of Industrial Firms
  - Data: Research Joint Ventures & Business Diversification
  - Vonortas & Jang (2004), Collaborate to Collude?
- **Technology Transfer**
  - Analytical Unit: Various Characteristics
  - Data: Various Data Sources
  - In Demand: Vector of Technology Flows

CISTP

STAGES OF RESEARCH COLLABORATION

Other Implications of Research Networks III

- **International Research Cooperation**
  - Analysis Unit: Nationalities of Research Collaborators
  - Data: International Research Projects
- **Regional Clustering**
  - Analysis Unit: Regional Bases of Researchers
  - Data: Various Data Sources
- **Or, What?**
  - Analytical Unit: ?
  - Data: ?
  - In Demand: ?

CISTP

ISSUES CONFRONTING INTERNATIONAL HEALTH RESEARCH COLLABORATION

13 major issues in conducting health research and public health initiatives in developing countries

- *Community engagement*
  Work collaboratively with host communities that share a common goal and interest.

- *Public engagement*
  Provide people with trustworthy information, and elicit and adopt public input.

Source: Peter Singer et al., *PLoS Medicine,* September 2007.

ISSUES CONFRONTING INTERNATIONAL HEALTH RESEARCH COLLABORATION

- *Cultural acceptability*
  Identify and be sensitive to cultural barriers and context.

- *Gender*
  Empower and educate women, who are often subject to abuse, discrimination, and exploitation.

- *Post-trial obligations/benefit sharing*
  Share the benefits of research with the host communities and individual research participants and offer sustained care after completion.
  Source: Peter Singer et al., *PLoS Medicine,* September 2007.

ISSUES CONFRONTING INTERNATIONAL HEALTH RESEARCH COLLABORATION

- *Collaboration*
  Collaborate with local public and private sectors and help create sustainable scientific infrastructure.

- *Role of civil society organizations*
  Engage civil society and nongovernmental organizations working with local communities.

- *Affordability*
  Make new technology affordable and ensure equitable delivery.
  Source: Peter Singer et al., *PLoS Medicine,* September 2007.

ISSUES CONFRONTING INTERNATIONAL HEALTH RESEARCH COLLABORATION

- *Accessibility*
  Provide adequate equipment, facilities, and staff to ensure accessibility to poor, rural areas.

- *Regulations*
  Balance regulatory oversight and intellectual property protection with meeting peoples' needs in dire health emergencies.

- *Collection, management, and storage of tissue samples*
  Develop guidance on the use of human tissues in research.

Source: Peter Singer et al., *PLoS Medicine*, September 2007

ISSUES CONFRONTING INTERNATIONAL HEALTH RESEARCH COLLABORATION

- *Corruption and poor governance*
  Beware of corruption and lack of social and political infrastructure as obstacles to accessing new technology.

- *Unintended consequences*
  Consider and address consequences such as unintended promotion of sexual practice due to perceived benefits of vaccination and consequences of genetically modified organisms.
  Source: Peter Singer et al., *PLoS Medicine,* September 2007.

IMPLICATIONS TO PNHRS:

Questions to ASK:

- What is PNHRS as a research system?
- Where is PNHRS in terms of levels and venues of collaborative research? Domestic and international?
- How does PNHRS address its funding issues?

Answers to these questions would lead to a conceptualization and a better understanding of collaborative research paradigm for PNHRS in the near future.

Sample Long-Term Strategic Research Issues: Possible impacts of climate change in the mid-to-late-21st century

Phenomenon and direction of trend	Likelihood of future trends	Human Health
Over most land areas, warmer and fewer cold days and nights, warmer and more frequent hot days and nights	Virtually certain	Reduced human mortality from decreased cold exposure
Warm spells/ heat waves. Frequency increases over most land areas.	Very likely	Increased risk of heat-related mortality, especially for the elderly, chronically sick, very young, and socially isolated.
Heavy precipitation events. Frequency increases over most areas.	Very likely	Increased risk of deaths, injuries and infectious, respiratory and skin diseases.
Area affected by drought increases	Likely	Increased risk of food and water shortages; increased risk of malnutrition; increased risk of water-and food-borne diseases.
Intense tropical cyclone activity increases	Likely	Increased risk of deaths, injuries, water-and food-borne diseases;post-traumatic stress disorders.
Increased incidence of extreme high sea level (excludes tsunamis)	Likely	Increased risk of deaths and injuries by drowning in floods; migration-related health effects.

Source: World Bank, Global Monitoring Report 2008, Table 7.3

Thank you

for a more competitive

and innovative

Philippines!!!